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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/064,330	07/02/2002	Ilia Greenblat	56162.000368	8289

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EXAMINER

CHOU, ALBERT T

ART UNIT	PAPER NUMBER
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2616

DATE MAILED: 04/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/064,330

Applicant(s)

GREENBLAT, ILIA

Examiner

Albert T. Chou

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,590,124 to Robins (hereinafter referred to as "Robins") in view of US Patent No. 6,662,256 to Foo.

Since US Patent No. 5,504,747 (US Patent Application No. 08/026,969, filed March 3, 1993) is incorporated in Robins by reference [**Col. 12; lines 24-28**], the examiner considers US Patent No. 5,504,747 (hereinafter referred to "Robins-Sweazey") is formed as parts of Robins' disclosures.

Regarding claim 1, Robins-Sweazey teaches a rings-based system comprising:
a plurality of ring members on a ring that communicate using point-to-point connectivity [**Fig. 1; col. 5, lines 62-63; col. 6, lines 4-8**]; a message traversing the ring from member to member [**Fig. 1; col. 6, lines 4-8**]; the system being adapted so that upon the message arriving at a given ring member the message is processed by that ring member if the message is applicable to that ring member [**Fig. 1; col. 6, lines 17-21**], and if the message is not applicable to that ring member, the message is

passed on to the next ring member **[Fig. 1; col. 6, lines 21-25]**; wherein at least one of the ring members comprises a bridge **[Fig. 1, 54A Bridge Node; col. 6, lines 33-34]**.

Robins-Sweazey may be silent or deficient to the further limitation of the rings-based system on a chip.

Foo teaches the further recited limitation above by illustrating the sequential bus forms a daisy chain, which interconnects each of the modules and forms a ring network within an integrated circuit device **[Fig. 3, Integrated Circuit Device 30; col. 3, lines 18-20, 62-64]**.

It would have been obvious to a person of ordinary skill in the art prior to the applicant's invention to implement the rings-based system of Robins-Sweazey within an Integrated Circuit Device 30 as disclosed in Foo since each of the individual leaf nodes in Robins-Sweazey or modules in Foo may be associated with CPU, RAM, etc. of a computer systems **[Robins-Sweazey: col. 5, lines 62-65]**.

The motivation for combining the reference teachings to form a rings-based system on a chip would be to reduce the number of buses or communication links, avoid the bus contention issues among connecting modules, and improve the performance of data transfer within the computer system. The motivation would have a reasonable expectation of success since both references teach that modules or components of a computer system are interconnected by forming in a ring for improving the information routing between on-chip modules.

Regarding claim 2, Robins-Sweazey teaches the system, wherein the bridge allows messages to travel from one side to another side of the bridge without passing through intermediate ring members **[Fig. 1; col. 6, lines 47-57]**.

Regarding claims 3 and 10, Robins-Sweazey teaches the system, wherein the bridge is configured so that the message arriving at the bridge is routed according to whether an address associated with the message corresponds to one side of the bridge or the other side of the bridge **[Fig. 1; col. 6, lines 47-57]**.

Regarding claims 4 and 11, Robins-Sweazey teaches the system, wherein the message is passed across the bridge when the address is associated with the one side of the bridge, and wherein the message is passed through the bridge when the address is associated with the other side of the bridge **[Fig. 1; col. 6, lines 47-57]**.

Regarding claims 5 and 12, Robins-Sweazey teaches the system, wherein the bridge includes logic with a range of addresses, such that the message is routed to one side of the bridge or the other side of the bridge depending on whether the address is within the range **[Fig. 1; col. 2, lines 63-65; col. 6, lines 47-57]**.

Regarding claims 6 and 13, Robins-Sweazey teaches the system, wherein the logic is established based on a configuration message that causes the ring members to assign their address spaces **[Fig. 1; col. 3, lines 1-3]**.

Regarding claims 7 and 14, Robins-Sweazey teaches the system, wherein the configuration message is an enumeration message **[Fig. 1; col. 3, lines 4-13]**.

Regarding claim 8, Robins-Sweazey teaches the system, wherein the plurality of ring members are a first plurality of ring members comprising a first ring network **[Fig. 1,**

Ring 22A, Leaf Nodes 20A-20D; col. 5, lines 62-63], further comprising a second plurality of ring members comprising a second ring network **[Fig. 1, Ring 22B, Leaf Nodes 20E-20H]**, and wherein the bridge comprises a bridge between the two ring networks **[Fig. 1, Bridge 23A; col. 6, lines 40-42]**.

Regarding claim 9, Robins-Sweazey teaches the system, wherein the bridge is adapted to determine which messages to pass to the second ring network and which messages to keep on the first ring network **[Fig. 1; col. 6, lines 47-57]**.

Regarding claim 15, Robins teaches the system, wherein the bridge is adapted to process a first category of message and a second category of message **[Fig. 10; Encoding Scheme for Frame Symbol Type; col. 15, lines 1-25]**.

Regarding claim 16, Robins teaches the system, wherein the bridge makes a routing determination based on the second category of message **[PUT/Write & GET/Read, col. 10, lines 6-19; Fig. 10; Encoding Scheme for Frame Symbol Type; col. 15, lines 1-25]**.

Regarding claim 17, Robins teaches the system, wherein the first category of message is a supervisory message **[Fig. 10; Reset & Resume; col. 15, lines 1-25]** and the second category of message is a work message **[Fig. 10; GET & PUT; col. 15, lines 1-25]**.

Regarding claim 18, Robins teaches the system, wherein the bridge identifies the category of message by examining a message type included in the message **[Figs. 4-10; Encoding Scheme for Frame Symbol Type; col. 15, lines 1-25]**.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 19-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,590,124 to Robins (hereinafter referred to as "Robins") in view of US Patent No. 6,662,256 to Foo and further in view of US Patent No. 6,414,941 to Murakami.

Since US Patent No. 5,504,747 (US Patent Application No. 08/026,969, filed March 3, 1993) is incorporated in Robins by reference [**Col. 12; lines 24-28**], the examiner considers US Patent No. 5,504,747 (hereinafter referred to "Robins-Sweazey") is formed as parts of Robins' disclosures.

Regarding claim 19, Robins-Sweazey teaches a rings-based system comprising:
a plurality of ring members on a ring that communicate using point-to-point connectivity [**Fig. 1; col. 5, lines 62-63; col. 6, lines 4-8**]; a message traversing the ring from member to member [**Fig. 1; col. 6, lines 4-8**]; the system being adapted so that upon the message arriving at a given ring member the message is processed by that ring member if the message is applicable to that ring member [**Fig. 1; col. 6, lines**

17-21], and if the message is not applicable to that ring member, the message is passed on to the next ring member **[Fig. 1; col. 6, lines 21-25]**; wherein at least one of the ring members comprises a bridge **[Fig. 1, 54A Bridge Node; col. 6, lines 33-34]**.

Robins-Sweazey may be silent or deficient to the further limitations of the rings-based system on a chip and the message includes information indicating whether the message has already passed through one of the ring members.

Foo teaches the further recited limitation of rings-based system on a chip by illustrating the sequential bus forms a daisy chain, which interconnects each of the modules and forms a ring network within an integrated circuit device **[Fig. 3, Integrated Circuit Device 30; col. 3, lines 18-20, 62-64]**.

Murakami further teaches the recited limitation above by including a ring network supervisory system supervising the communication status of a ring network wherein the message includes information indicating whether the message has already passed through one of the ring members **[Figs. 2 & 3; when the total number of nodes is used as the one-round circulation checking information, the initial value of the Passage Counter 35, Fig. 3, is set to 1 and the Passage Counter Operation Unit 23, Fig. 2, is set up to add 1 to the Passage Counter 35 once the message has passed through one ring member; col. 8, lines 38-49]**.

It would have been obvious to a person of ordinary skill in the art prior to the applicant's invention to implement the rings-based system of Robins-Sweazey within an Integrated Circuit Device 30 as disclosed in Foo and further to combine Murakami's teachings with Robins-Sweazey to accomplish the claimed subject matter.

The motivation, in addition to those stated in claim 1 rejection, for combining the reference teachings would be to perform the economical stream routing and, at the same time, to quickly detect and remove the non-occupied or stray message in the ring to prevent slowly choking or eventually bringing down the ring network due to the network congestion. The motivation would have a reasonable expectation of success since both references teach the traffic routing and management in ring-based network system.

Regarding claim 20, Murakami teaches the system wherein the information is used to identify stray messages **[The non-occupied frame is a frame not generated by any of the plurality of nodes; col. 8, lines 17-24].**

Regarding claim 21, Murakami teaches the system wherein a stray message is a message having an address that does not correspond to any of the members on the ring **[The non-occupied frame is a frame not generated by any of the plurality of nodes; col. 8, lines 17-24].**

Regarding claim 22, Murakami teaches the system wherein the system is adapted to respond to information indicating that the message has already passed through one of the ring members by discarding the message **[Figs. 2 & 4; col. 9, lines 9-25, 35-43; col. 10, lines 38-51].**

Regarding claim 23, Robins-Sweazey teaches the system of further comprising: a second plurality of ring members on a second ring **[Fig. 1; Ring 22B]**; a bridge connecting the two rings **[Fig. 1, Bridge 23A]**; and wherein the bridge includes logic for

identifying when the message has already passed the bridge **[Fig. 1, 54A Bridge Node; col. 6, lines 33-57]**.

Regarding claim 24, Robins-Sweazey teaches the system wherein one of the ring members is an anchor **[Col. 2, lines 63-67]**, and wherein the anchor includes logic for identifying when the message has already passed the anchor **[Fig. 1, 54A Bridge Node; col. 6, lines 33-57]**.

Regarding claim 25, Murakami teaches the system wherein the information is a bit included in the message that is set to indicate the message has previously passed through or has not been previously passed through the one ring member **[Figs. 2 & 3; when the total number of nodes is used as the one-round circulation checking information, the initial value of the Passage Counter 35, Fig. 3, is set to 1 and the Passage Counter Operation Unit 23, Fig. 2, is set up to add 1 to the Passage Counter 35 once the message has passed through one ring member; col. 8, lines 38-49]**.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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6. Claims 26-30 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent No. 6,414,941 to Murakami.

Regarding claim 26, Murakami teaches a method of detecting stray messages in a rings-based system **[Figs. 1 & 4]**, comprising:

providing a message including information designating whether the message has passed by a ring member on a ring with a plurality of members **[Fig. 3; Passage Counter Field 35; col. 7, lines 53-56]**;

modifying the information when the message passes by the ring member a first time **[Fig. 3; the node updates and rewrites Passage Counter; col. 7, lines 56-58]**; and

determining that the message is a stray message when the message arrives at the ring member a second time **[The non-occupied frame; col. 8, lines 17-24]**.

Regarding claim 27, Murakami teaches the method further comprising the step of removing the message in response to the step of determining **[Fig. 2; discard the received frame; col. 9, lines 9-25, 35-43]**.

Regarding claim 28, Murakami teaches the method wherein the information is at least one bit in the message **[Fig. 3; Counter Passage Field; col. 7, lines 56-58]**.

Regarding claim 29, Murakami teaches the method wherein the step of modifying comprises setting the at least one bit **[Fig. 3; updates & rewrites Passage Counter; col. 7, lines 56-58]**.

Regarding claim 30, Murakami teaches the method wherein the step of determining is performed by a bridge or an anchor on the ring **[Fig. 4; N1-N4, col. 10, lines 38-51]**.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- US Patent No. 6,266,797 to Godfrey et al. disclose "Data Transfer Network On A Computer Chip Using A Re-Configurable Path Multiple Ring Topology"
- US Patent No. 6,111,859 to Godfrey et al. disclose "Data Transfer Network On A Computer Chip Utilizing Combined Bus And Ring Topologies"
- US Patent No. 4,621,362 to Sy discloses "Routing Architecture For A Multi-Ring Local Area Network"
- US Patent No. 4,567,590 to Bederman discloses "Message Stripping Protocol For A Ring Communication Network"
- US Patent No. 5,537,413 to Yang et al. disclose "Frame Removal Mechanism For Token Ring Networks"
- US Patent No. 5,886,992 to Raatikainen et al. disclose "Frame Synchronized Ring System and Method"

- US Patent No. 6,895,182 to Moriyama et al. disclose "Optical Ring Transmission System Using Squelch Method"


8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Albert T. Chou whose telephone number is 571-272-6045. The examiner can normally be reached on 8:30 - 17:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 571-272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Albert T. Chou
March 27, 2006

AC


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